

REMARKS

Applicants submit the present amendment in response to the Official Action mailed March 4, 2003, in which claims 11-16 were withdrawn from consideration and claims 17-22 were rejected. A petition for a two-month extension of the term for response to said Official Action, to and including August 4, 2003, is transmitted herewith.

In the Official Action, claim 22 was objected to as being dependent on rejected base claim 17 and intermediate claim 21. The Examiner's indication that claim 22 includes allowable subject matter is greatly appreciated. Claim 22 has been amended to be in independent form and is now believed to be in condition for allowance.

Claims 17-21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over International Application No. WO 97/05324 to *Shackford* in view of International Application WO 96/05365, also to *Shackford*.

The Examiner states that WO 97/05324 teaches a dewatering device (Fig. 3) for dewatering pulp to a consistency of at least 20%, a shredding device (Fig. 4) including a closed pulp shredding vessel, a transporting conduit and a reaction vessel for bleaching the shredded pulp with ozone. The Examiner also states that WO 96/05365 teaches "gas-sealingly conveying" high consistency shredded pulp through a conveyor having a pulp inlet and outlet, and using a pressure sensor and a differential controller to maintain an upstream pressure greater than the downstream pressure to prevent leakage backwards through the conduit. (Official Action at 2-3.) The Examiner contends that it would have been "obvious to the artisan to prevent the ozone gas of WO 97/05324 [sic] from leaking backwards through the pulp in conduit (106) using the pressure-sensor and

pressure-regulating device of WO 96/05065." (Official Action at 3, lns. 8-11.)

It is, therefore, the Examiner's contention that the combination of the pressure sensor and regulating device of WO 96/05065 in the apparatus of WO 97/05324 renders the present invention obvious. Applicants disagree.

In order for the Examiner to combine the WO 97/05324 and WO 96/05365 references, some motivation or suggestion for the combination must exist. The WO 97/05324 application does not teach regulating the gas pressure in the pulp shredding vessel and the reaction vessel so that ozone is prevented from leaking upstream through the conduit, as in the present invention. In fact, WO 97/05324 actually teaches away from preventing the bleaching gas from leaking upstream. WO 97/05324 states:

countercurrent flow of ozone in the first stage of bleaching results in greater ozone consumption . . . than the system having full co-current flow of the ozone relative to the pulp.

(*Id.* at 26, lns. 1-4.) Thus, the countercurrent flow of ozone in WO 97/05324 is considered an important and advantageous feature, because it provides for more complete usage of the bleaching gas. It is, therefore, clear that WO 97/05324 actually teaches away from making any combination with another reference in order to prevent countercurrent flow of the bleaching gas. Moreover, extraction of excess bleaching gas is accomplished using gas separation chambers. (WO 97/05324 Fig. 4, items 68, 114.) Gas separation chamber 68 is particularly well positioned within the system to recover the bleaching gas that has counter flowed to a position from where it may further leak upstream through the conduit, thereby eliminating the need for other countercurrent flow prevention measures within the system taught by WO 97/05324.

WO 96/05365 teaches that under operating conditions the "screw 24 and conveyor 16 form a porous plug" that serves as a "sealing medium" that "inhibits a migration of downstream gas in the opposite direction." (*Id.* at 3, lns. 18-22.) Moreover, "under dynamic conditions of continuous plug transport through the conveyor 16, the continuously forming and moving plug will serve as the *only* required gas sealing." (*Id.* at 4, lns. 2-5 (emphasis added).) WO 96/05365 does, however, provide for using pressure regulation to maintain a gas seal during times of system shutdown or when "a shorter length conveyor 16 which will not provide for a pulp plug having sufficient length to prevent gas leakage through the conveyor" is used. (*Id.* at 3, lns. 3-8.) Additionally, WO 96/05365 does not teach use of a dewatering device or of a closed pulp-shredding vessel.

One advantage taught by WO 97/05324 is to allow the bleaching gas to leak upstream to increase usage of the gas. This advantage would be lost if WO 97/05324 is combined with a gas pressure differential method of sealing, such as that used by WO 96/05365. Thus, the combination of the references is not only without motivation or suggestion, but is actually disfavored.

As it is believed that all of the rejections set forth in the Official Action have been fully met, favorable reconsideration and allowance are earnestly solicited.

If, however, for any reason the Examiner does not believe that such action can be taken at this time, it is respectfully requested that he telephone applicant's attorney at (908) 654-5000 in order to overcome any additional objections which he might have.

If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

Dated: July 21, 2003

Respectfully submitted,

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